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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,355	02/19/2002	Tomio Yamashita	020167	1518

23850 7590 01/17/2003

ARMSTRONG, WESTERMAN & HATTORI, LLP  
1725 K STREET, NW  
SUITE 1000  
WASHINGTON, DC 20006

EXAMINER

VU, HUNG K

ART UNIT PAPER NUMBER

2811

DATE MAILED: 01/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/076,355

Applicant(s)

YAMASHITA, TOMIO

Examiner

Hung K. Vu

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Invention of Group I, Claims 1-4 and 6-10, in Paper No. 5 is acknowledged.

Claims 5 and 11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 5.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Jain (PN 5,602,423).

Jain discloses, as shown in Figures 3, 7, 12 and 13, a semiconductor device comprising,

a semiconductor substrate (20);  
at least one dielectric film (22) arranged on the substrate and having an opening (34);  
a conductive portion (28,52) filling the opening;  
at least one dielectric member (38,50) embedded in the conductive portion that fills the opening.

With regard to claim 2, Jain discloses the at least one dielectric member is arranged in an island-like manner in the opening.

With regard to claim 3, Jain discloses the device having a multilayer wiring structure (58,60) including a lower wiring layer (58), which is arranged on the semiconductor substrate, wherein the conductive portion is formed in the lower wiring layer. (Note Figures 12-13)

With regard to claim 4, Jain discloses the conductive portion includes an external electrode terminal (60).

With regard to claim 6, Jain discloses a semiconductor device comprising,

a semiconductor substrate (20);  
at least one dielectric film (22) arranged on the substrate and including an upper surface,  
a lower surface, and an opening;  
at least one dielectric member (38,50) arranged in the opening;

a conductive portion filling (28,52) the opening so as to surround the at least one dielectric member.

With regard to claim 9, Jain discloses the at least one dielectric member is one of a plurality of separated dielectric members (50). (Note Figures 7-10 and 12-13)

With regard to claim 10, Jain discloses the conductive portion has a flat surface flush with the upper surface of the dielectric film. (Note Figures 6 and 13)

4. Claims 1-2, 4 and 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiraki (JP6-318590).

Hiraki discloses, as shown in Figures 1-3, a semiconductor device comprising,

a semiconductor substrate (1);

at least one dielectric film (3) arranged on the substrate and having an opening (4);

a conductive portion (7) filling the opening;

at least one dielectric member (6) embedded in the conductive portion that fills the opening.

With regard to claim 2, Hiraki discloses the at least one dielectric member is arranged in an island-like manner in the opening.

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With regard to claim 4, Hiraki discloses the conductive portion includes an external electrode terminal. (Note a lower portion of layer 7 in Figure 1(a))

With regard to claim 6, Hiraki discloses a semiconductor device comprising,

- a semiconductor substrate (1);
- at least one dielectric film (3) arranged on the substrate and including an upper surface, a lower surface, and an opening (4,5);
- at least one dielectric member (6) arranged in the opening;
- a conductive portion (7) filling the opening so as to surround the at least one dielectric member.

With regard to claim 7, Hiraki discloses the dielectric member has a height that is the same as the thickness of the dielectric film.

With regard to claim 8, Hiraki discloses the dielectric member has an end flush with the upper surface of the dielectric film and a further end flush with the lower surface of the dielectric film.

With regard to claim 9, Hiraki discloses the at least one dielectric member is one of a plurality of separated dielectric members. (Note Figure 1(a))

With regard to claim 10, Hiraki discloses the conductive portion has a flat surface flush with the upper surface of the dielectric film.

*Conclusion*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung K. Vu whose telephone number is (703) 308-4079. The examiner can normally be reached on Mon-Thurs 7:00-4:30 and every other Friday 7:00-3:30, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Vu

January 10, 2003

Hung K. Vu